

Gerd E.G. Westermann (11.05.1927–5.11.2014)

Alberto C. RICCARDI

Gerd Ernst Gerold Westermann was born on May 11, 1927 in Berlin. In 1930, his family moved to the medieval town of Goslar, the center of the “Klassische Geologische Quadratmeile”, described by J.W. Goethe. When the loss of Germany's eastern territories in 1945 destroyed Gerd's childhood dreams to become a forester, he followed his other interests – geology and fossils. After a brief service in the Volksturm and a few months internment in what he described as “a starvation camp under free skies”, he finished high school in 1946. German universities having essentially closed down, he spent part of the following two years working underground in the famous medieval gold and silver (lead-zinc) mines, Rammelsberg and Bad Grund of the Harz Mountains, around Goslar, and studied ore paragenesis in the mine laboratories; made many excursions into the surrounding “Squaremile” (c. 7×7 km); guided students of the near-by Mining Academy of Clausthal, studied geology books; made up collections of hand-shaped rock specimens of rectangular shapes for teaching; and catalogued 4,000 specimens of fossil invertebrates in the Goslar Museum. To win a place at a university, he then worked producing bricks for the rebuilding of the universities destroyed during the war. Making the best of it, he invented a method to cast and collect large Hauterivian ammonites exposed by the power shovel directly in clay pit, which ended up at the Hannover Geological Survey.



In 1949 he finally began his geology studies at the Technical University of Braunschweig, where geology and paleontology was thought by P. Dorn. There he obtained his Vordiplom in 1950. Then he moved to the University of Tübingen, to study with one of the leading paleontologists and ammonitologists of the time, Prof. Otto H. Schindewolf. Gerd proposed to write his thesis on the Otoitidae based on a precise collecting in the old shale pit of Gerzen, near Alfeld. He would excavate long trenches and record the entire macro-fauna every decimeter, as done previously by Brinkmann in England. Schindewolf's paleontological laboratory was carried out by H. Hölder. Gerd went to Hannover to discuss his research project with Prof. A. Bentz, President of the Geological Survey, who became his sponsor and ordered the Survey to pay his and two laborers expenses during six weeks of fieldwork. In 1952 the Geological Survey in Hannover gave Gerd a temporary employment in the Paleontology Division, where thanks to Prof. Bentz he received enough technical support to complete his thesis. In 1953 he obtained his Diplom in Geologie and Doktor der Naturwissenschaften, completing an outstanding study on the Jurassic ammonite family Otoitidae of northern Germany and the world, which was published in 1954. This work set the style he was to maintain throughout his scientific career, a world-wide interest in the Jurassic, a zest to face large and complex projects and to finish them in the shortest possible time.

From 1953 to 1957 he worked as geologist and paleontologist in the Geological Survey of Lower Saxony in Hannover. There he wrote monographs on Bajocian and Bathonian ammonites and, in 1957, passed the 2nd State Examination of the German Geological Survey. During these years, Gerd began to realize his world-wide interest in the Jurassic with a brief biostratigraphic study of the Sierra de la Demanda, northern Spain, where he was sent by Prof. Bentz, and had the help of the then geology student W. Huf. For 1956 it became clear to Gerd that “in the New World... new discoveries awaited”, and in 1957 he moved to McMaster University (Hamilton, Ontario, Canada), which for the next 40 years would become known, thanks to Gerd, as a center for excellence in ammonite and Mesozoic research. Many aspects of this period of his life were included in an illustrated unpublished account written by Gerd in 2006 to be circulated to his family and friends, under the title “Memories good and bad truly told”.

At the close of the 1950's, studies of Jurassic ammonites of the United States of America and Canada were conducted by the respective geological surveys, where Ralph Imlay and Hans Frebold were the leading specialists. Consequently, Gerd extended his studies to Triassic bivalves of Canada and to Jurassic ammonites of other regions. The first area chosen was in south Alaska where, under inclement weather conditions and accompanied only by a student assistant and a rifle, he collected most of the ammonite fauna he would monograph in the following years (1964, 1969). Similarities between some Aalenian specimens from Alaska and the Andes brought Gerd's attention to the Middle Jurassic fauna of South America. As a result, he spent most of his first (1965) sabbatical leave in Chile and Argentina.

During his first visit to Buenos Aires, I had the opportunity to meet him and to participate in his first field trip to the Jurassic of west-central Argentina. Thus I was initiated in the study of Jurassic ammonites and biostratigraphy and we began a cooperative work and close friendship that continued for almost fifty years. In a few weeks, we traversed the best Jurassic sections of the area and collected large numbers of ammonites. Long days of fast walking and vigorous activity ended beside an open fire under a sky full of stars, with Gerd playing old songs on his always present mouth organ. Thus was born a monographic series on the Middle Jurassic ammonites of the Andes that would continue for the next decades, and on which we were still working when he died.

Early in his career, Gerd became interested in the biological approach to fossils through his studies on the significance of population variation and sexual dimorphism in ammonite taxonomy, as well as ammonite ecology as based on shell architecture. His studies on the function of septum and suture (1956) were extended to the whole ammonite shell (1971), and to other cephalopods in a seminal paper (1973) on depth limits of belemnites and nautiloids based on the strength of concave septa. Meanwhile he secured a research grant to support new field work on living *Nautilus* around the Fiji Islands. Gerd contributed substantially and frequently to the debate, sometimes heated, on the significance of ammonoid shell architecture, on the controversy of the origin of shell perforations (mosasaur predation vs. limpet home scars), and more recently on the species concept as applied to ammonite species.

As stated in the dedication of the Lifetime Achievement Award he received from the VI International Symposium Cephalopods Present & Past (2004), “in our life time, no ammonite worker has become more synonymous with the functional morphology and mode of life of ammonites than Gerd Westermann. His name is intimately associated with questions of the functional significance of septa, buoyancy, and the siphuncular tube. Armed with a formidable intellect, and insatiable curiosity, and a no-nonsense style, he has introduced the rigorous concepts and theories of architecture and engineering, pressure and depth, to the field of ammonite studies and has thus transformed our view of how those animals lived and evolved”.

Meanwhile, Gerd continued his research on the systematics, stratigraphy and world-wide chronology of Jurassic ammonites. The scope of his studies became even larger, geographically and in time. His research on the Middle Jurassic and, in some cases, Upper Jurassic and even Lower Cretaceous ammonites was extended to Mexico and Peru as well as to more distant areas of the world, especially East Africa (Kenya, Tanzania), India (Kuchchh), the Himalayas (Nepal, Tibet), and Oceania (New Guinea, New Zealand). Special mention is due to his 1976 expedition to the



Sula Island in the Moluccas of Indonesia, an area whose important ammonite fauna became known through studies by G. Boehm early in the last century, but lacked all stratigraphic information until Gerd's visit.

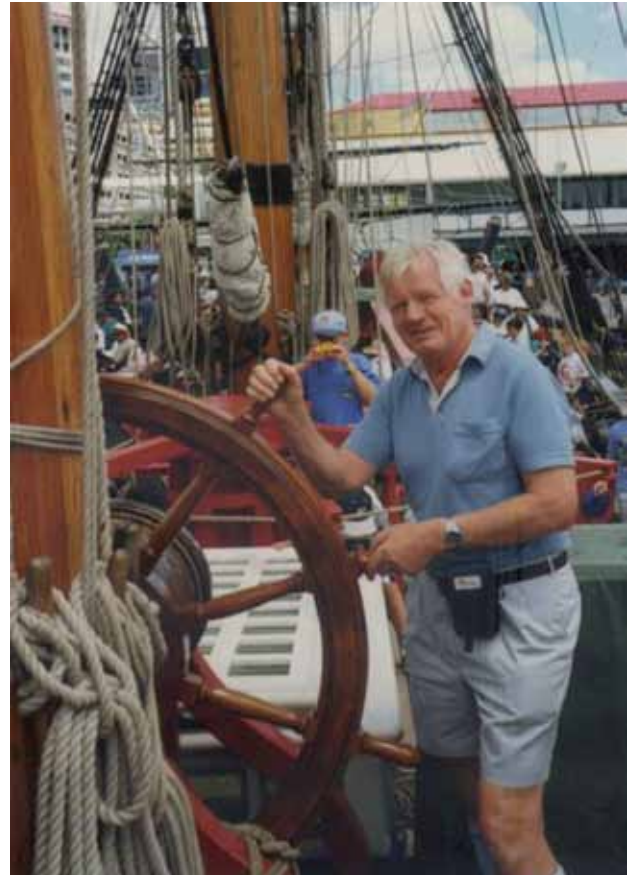
Gerd was not intimidated by the staggering scope of his projects and in many instances has had others participate, often with lasting cooperation. He attracted graduate students, postdoctoral fellows and visiting scientists from different parts of the world, who worked with him at McMaster University: Theo A. Getty (England) and Jay Krishna (India) worked on Middle-Upper Jurassic ammonites of New Guinea and India; Harish Verma (India), José Sandoval (Spain), Federico Olóriz (Spain) and Mike Marshall (Canada) on Middle and Upper Jurassic ammonites of Mexico; Russell Hall (Australia) and Paul Smith (England) on Lower and Middle Jurassic ammonites of Canada; David Taylor (USA) on Middle Jurassic ammonites of Oregon; Mike Geraghty (Canada) on ammonite concretions of Germany; Yigang Wang (China) on Middle Jurassic ammonites of Tibet; Peter Ward (USA) on Cretaceous ammonite of USA and living *Nautilus* of Fiji; Roger Hewitt (England), Raúl Vicencio (Chile), John Chamberlain (USA), Antonio Checa (Spain), and Cameron Tsujita (Canada) on ammonite shell architecture and/or ecology; and I myself on the Jurassic of the Andes.

Gerd organized a number of symposia. Especially memorable was "Sexual Dimorphism in Fossil Invertebrates" which took place during the ill-fated International Geological Congress in Prague, 1968, from which he used to mention that the windows had to be closed to muffle the exhaust noise of the passing Soviet tanks. In 1982, he held the Calgary symposium on "Jurassic-Cretaceous Biochronology and Biogeography of North America" to honor Ralph Imlay and George Jletzky. He also promoted and edited "The Jurassic Ammonite Zones of the Soviet Union" (1988). In 1975, he founded the Circum-Pacific Jurassic Research Group IGCP #171 which he led for 10 years. It included many scientists from different countries and disciplines, convened in Argentina, Canada and Japan, and resulted in a series of "Taxa Range and Correlation Charts" as well as the monumental synthesis "Circum-Pacific Jurassic".

In 1988, Gerd retired early from his McMaster professorship, but as Professor Emeritus retained his office and research grant – so that he could spend full time on research, travel and collaboration with graduate students and colleagues abroad. In the 1990's, he spent extended periods in New Zealand to solve the intricate problems of taxonomy and inter-regional time-correlation caused by the highly endemicity of its faunas. He founded an international research group, "Friends of Paleobiogeography", comprising specialists in most marine taxa, extinct and extant. They worked on the first Guidelines for Biogeographic Classification and on the confusing nomenclature of past bioprovinces and realms. Their first meeting was held in Italy at the conference "Paleobiogeography & Paleoecology 2001", which he co-chaired. During the first decade of the 21 century, even if retired and with some heart problems, Gerd was still following in many of the new developments produced in the scientific fields on which he worked all his life. He still published a number of papers on the terminology of extinction in Middle Jurassic ammonoids, finite elements analysis of simulated ammonoid septa, new evidences on Bajocian ammonoids off-shore of Australia, *Gravesia* homomorphs of the Late Kimmeridgian of Mombasa, and hydrostatics, propulsion and life-habits of the Cretaceous ammonoid *Baculites*.

Gerd passed away peacefully, after a week of being in hospital, with his family by his side, at Oakville-Trafalgar Memorial Hospital, Ontario, Canada, on Wednesday, November 5, 2014 at the age of 87.

Gerd Westermann's contribution to Jurassic biostratigraphy, ammonite taxonomy and cephalopod paleobiology has been immense. The impact of his 24 monographs and books and over 170 papers is larger than the numbers suggest, as many deal with areas where all previous information was wanting or scanty. They represent by areas covered the largest contribution



made by a single author to the Jurassic of the world during the last half of the twentieth century. Probably no other specialist studied so many Jurassic outcrops and examined so many collections around the world.

An illustrated account of his most important field trips was prepared by Gerd in 2005 to be circulated to his family and friends, under the title “World Travels of an Ammonitologist”. Over 1000 slides were reduced to 400 prints of six selected trips (Alaska Peninsula, Peru and Northern Chile, Espinacito Pass in Argentina, Tibet and Nepal, Sula Islands in Indonesia, and New Guinea). Each of these expeditions was preceded by an introduction with maps and ended with an easy-to-understand summary of the scientific results, such as illustrating new species and sometimes genera. As stated by him each of those trips “lasted only a few weeks, but the preparation and, especially, evaluation of the Jurassic ammonites found in those remote areas took many months to years. But the results in the form of many new species, genera and even families, as well as in the form of revised stratigraphic sequences, proved that they were essential to ammonite paleontology and Jurassic biostratigraphy – besides being lots of fun”. In total he proposed 8 new subfamilies, 32 genera and subgenera and 180 species and subspecies of Jurassic ammonites.

Gerd was honoured with the Billings Medal (1995) by the Canadian Geological Association and with a Lifetime Achievement Award by the VI International Symposium Cephalopods – Present and Past (2004). Gerd was a member of the International Stratigraphic Commission and of several of its Working Groups; a corresponding member of the National Academy of Exact, Physical and Natural Sciences of Argentina (1991) and of the Argentinean Geological Society (1992); he was member of many national and international scientific societies; and served two terms as Secretary-General (1968–76) of the International Paleontological Union and its successor, the International Paleontological Association, during its most difficult years of re-organization.

To Gerd, scientific honesty was a must for himself and assumed of others, and differences in scientific matters were never personal. Gerd’s commitment to the study of ammonites and the Jurassic as well as cephalopod paleobiology was beyond usual standards. He not only loved it, he lived it. But Gerd had many other attributes of a gifted person. He loved classical music, arts, architecture, archeology as well as gardening, hiking and all aspects of nature. Every time he saw a bird, a squirrel, a sunset, a snow fall, or any other manifestation of the natural world he enjoyed it as it would have seen it for the first time. In many occasions he would take a nice photograph, scribble a few words in its back and send it by mail to his friends, to share his wonder. He was a very sensitive human being, always ready to help others, especially those close to him such as his family, friends and colleagues. The hospitality of Gerd and his wife, Jean, was well known to all who were their guests at their home on the shores of Lake Ontario in Canada.

As a colleague and as a friend, through the years and distance, Gerd was always a mentor and role model; it was rewarding to share a life of common interests, full of unforgettable memories. For all that, thank you Gerd. We will miss you.

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